



DEPARTMENT OF THE NAVY
COMMANDER
NAVAL METEOROLOGY AND OCEANOGRAPHY COMMAND
1020 BALCH BOULEVARD
STENNIS SPACE CENTER, MS 39529-5005

NAVMETOCOMINST 3140.2E
N3
27 JUN 1995

NAVMETOCOM INSTRUCTION 3140.2E

From: Commander, Naval Meteorology and Oceanography Command

Subj: LOCAL AREA AND AREA OF RESPONSIBILITY FORECASTER'S
HANDBOOKS

Ref: (a) OPNAVINST 5510.1H, Chapter 12
(b) NAVMETOCOMINST 5450.9E
(c) NAVOCEANCOMINST 3140.1J

Encl: (1) Guidelines for Format and Content of Forecaster's
Handbooks

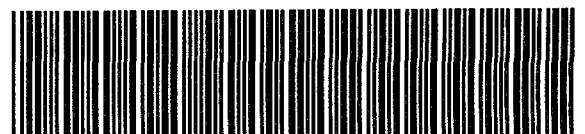
1. Purpose. To state the continuing requirement for maintenance of Forecaster's Handbooks and to provide basic guidance on their format and contents. This instruction contains important revisions and should be reviewed in its entirety.

2. Cancellation. NAVOCEANCOMINST 3140.2D

3. Background. Local-Area Forecaster's Handbooks have been prepared by Navy and Marine Corps shore-based meteorological units since 1954. These handbooks provide newly assigned weather forecasters and observers with knowledge concerning local meteorological or oceanographic phenomena that are associated with typical synoptic and local scale developments in their geographic region.

4. Discussion

a. There is a continuing need to maintain Forecaster's Handbooks, particularly in view of remote support provided through the Sub-Regional Forecast (SRF) concept of operations.



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In addition to basic meteorological guidance for airfields, there is also a need for guidance on oceanographic/atmospheric effects on weapon sensor systems and platforms. Most importantly, forecaster handbooks should introduce forecasters to the environmental effects of concern to Naval operations, tactics, and training evolutions common to the commands supported by that activity.

b. Forecaster handbooks are first and foremost for the benefit of the originating activity and for the remote SRF forecaster. Each activity should have an established program which continually verifies tried and tested local thumb rules, as well as a program to develop new forecasting techniques. Since these handbooks are used for indoctrinating newly-reported forecasters, as well as refreshing the memory of experienced forecasters, detailed knowledge of its contents are generally a prerequisite to each forecaster's local qualification and certification.

c. In most cases, Forecaster's Handbooks do not meet the criteria for the caveat, "For Official Use Only (FOUO)." Alternatively, handbooks should bear a distribution statement on their cover, in accordance with reference (a). As general guidance, a distribution limited to U.S. Government agencies and their contractors (Distribution Statement C) is recommended on the basis of the administrative/operational purpose.

5. Action.

a. NAVMETOCCOM activities and Marine Corps aviation weather activities assigned local area, SRF and/or area of responsibility (AOR) forecasting responsibilities, shall develop and maintain appropriate forecaster handbooks in consonance with the guidance of paragraph 4 above, and the general guidelines of enclosure (1). Theater centers are required to maintain an up-to-date copy of each forecaster's handbook issued by subordinate activities within their AOR.

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(1) "Area of Responsibility," as used herein, is defined as a broad geographic area for which environmental support responsibilities are specifically assigned in references (b) and (c). The responsibilities may be further delegated by cognizant theater centers with the specific approval of COMNAVMETOC COM.

(2) "Local Area," as used herein, is defined as the base or station on which the command or detachment is located; its immediate geographical area; outlying attached facilities; and, such routinely supported aviation routes, operating areas, facilities, and ranges as are deemed appropriate for inclusion.

b. All Forecaster's Handbooks shall be reviewed and updated internally at least annually. A complete revision will be promulgated at an interval not to exceed three years.

(1) Production of hardcover, "polished" works should not be undertaken at the expense of maintaining a working, living handbook. They should be kept up-to-date by periodic internal review and, as necessary, complete revision. Loose leaf appendices of thumb rules, as well as pertinent case studies which describe common and rare events, are preferable to out-of-date glossy publications.

(2) Similarly, when a forecast handbook published by a research activity effectively covers an AOR, or local area environment, an activity need not develop a separate forecast handbook of its own - provided it supplements the research publication with its own appendices of thumb rules, case studies, summaries of conditions affecting supported commands, etc. If significant differences are noted between local forecasting rules and those published by a research activity, this should be brought to the attention of COMNAVMETOC COM (N31).

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c. Each NAVMETOCCOM and Marine Corps weather activity will submit one (1) paper copy of any revised final smooth version of their Forecaster's Handbook to NAVOCEANO (Code N2513).

d. A copy of changes to current copies of Forecaster's Handbooks shall be provided to the following:

(1) Commander, Naval Meteorology and Oceanography Command (N312) (N332 - Marine Corps location only).

(2) Commandant of the Marine Corps (ASL-44) - Marine Corps locations only.

(3) Commanding Officer, Naval Oceanographic Office, (Code N2513).

(4) Naval Research Laboratory, (NRL) Monterey, CA.

(5) Meteorological Library (Code 63) of the Naval Postgraduate School, Monterey, CA.

(6) Supporting SRF activity, parent NAVMETOCCOM activity and Theater METOC Center.

(7) United States Air Force Environmental Technical Applications Center (USAFETAC/LD), Scott AFB, IL 62225.

6. Additional Guidance. The guidance contained in paragraph 5c of this instruction pertains to any agency, laboratory, or contractor that produces forecasting studies or handbooks for which funding is provided by COMNAVMETOCCOM. COMNAVMETOCCOM will conduct a technical review of the final deliverable product prior to publication. Additionally, COMNAVMETOCCOM will approve the publication for release and provide specific distribution instructions for each study or handbook that it

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sponsors. If printed matter is distributed, the statement "Prepared for: Commander, Naval Meteorology and Oceanography Command, Stennis Space Center, MS 39529-5000; Prepared by: [Originating Agency Name]," along with the document title and command logos, shall appear prominently on the front cover. This guidance is necessary to keep funding resources and the distribution process at a manageable level.

7. Concurrence. This instruction has the concurrence of the Commandant of the Marine Corps. Marine Corps activities shall take those actions prescribed in this instruction which are not contradictory to specifically expressed policies of the Commandant of the Marine Corps.



D. A. MAUTNER
Acting

Distribution:

C40	Shore Based Detachment, Meteorology and Oceanography
FD	Shore Activities under the Command of COMNAVMETOCCOM
V4	Marine Corps Air Facility (Attn: Weather Service Officer)
V5	Marine Corps Air Station (Attn: Weather Service Officer)

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Copy to:

A3 Chief of Naval Operations (N096 only)
A6 Headquarters, U.S. Marine Corps (Attn: ASL-44)
C20C Naval Research Laboratory Detachments (Monterey only)
FF42 Naval Postgraduate School
FT15 Technical Training Unit
FT78 NETPMSA (Code AG-311)
V12 Marine Corps Combat Development Command
V16 Marine Corps Base (Attn: Weather Service Officer)
V25 Marine Corps Air-Ground Combat Center
46Q Marine Wing Support Group
46R Marine Wing Support Squadron
46U Aviation Weapons & Tactics Squadron
MARCORDET Keesler AFB
HQ Air Weather Service (DOOF), Scott AFB, IL 62225-5008
USAFETAC/LD, Scott AFB, IL 62225-5838

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GUIDELINES FOR FORMAT AND CONTENT OF FORECASTER'S HANDBOOKS

1. **General**. The intent of these guidelines is to standardize format and prescribe basic contents of Forecaster's Handbooks.

Contents and details will vary -- based upon the functions of the originating command and the mission of the customers supported. These guidelines describe minimum content; additional material deemed necessary or desirable is encouraged. The liberal use of readily available references and excerpts is encouraged. Handbooks must remain current and their construction should facilitate frequent changes and additions.

2. **Basic Format**. For the purposes of standardization, both the Local Area Forecaster's Handbook and Area of Responsibility (AOR) Forecaster's Handbook will be prepared in accordance with the following general format and content. Activities that maintain both a local and an AOR handbook may combine them in one volume.

<u>Section</u>	<u>Content</u>
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|-----|--|
| I | <u>Basic Description</u> . Description of station and/or area, facilities, commands and staffs supported, communications available, and manner in which functions are performed. |
| II | <u>Climatology</u> . Meteorological and oceanographic patterns and statistics, as applicable. |
| III | <u>Forecasting</u> . Forecasting techniques and procedures, and rules for modification of numerical products. |
| IV | <u>Specialized Forecasts</u> . Specialized products, techniques, applications and indices. |

Enclosure (1)

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V Environmental Effects. Significant environmental factors impacting operations, training and tactics.

VI References. As required.

3. **Content**. The following elaborates on the suggested content by section. It is not intended to be all inclusive, but rather to suggest the types of material that are to be included. The important point is that all areas pertinent to assigned forecasting responsibilities should be adequately addressed.

a. **Section I -- Basic Description**

(1) Provide annotated charts and/or diagrams depicting significant features of the station, activity spaces, meteorological/oceanographic instrumentation and locations, surrounding area and terrain, local harbor and water areas, local operating areas, and assigned geographical area of responsibility, as appropriate.

(2) Include, as appropriate, in accompanying text:

(a) A discussion of the installed meteorological instrumentation, including representativeness of readings and any problems.

(b) A discussion of the effects of surrounding terrain and water areas on local (or area) weather.

(c) A summary of available communications resources and their utilization.

(d) A listing of the commands and staffs supported, with a discussion of their operations and/or functions and their unique meteorological and oceanographic support requirements.

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(e) A discussion of the manner in which assigned meteorological and oceanographic support functions are to be performed, including any appropriate instructions or references regarding unique responsibilities if any.

b. Section II -- Climatology

(1) This section should not duplicate available climatological summaries or atlases, although those of interest should be referenced and available. Rather, this section should provide useful forecasting aids in the form of annotated charts, graphs, or tabulations developed for ready reference from those publications and/or from proven and documented forecasting techniques. It will treat both meteorology and oceanography where appropriate. A supplementary text should be provided as necessary for detail and clarity.

(2) Synoptic scale meteorological and oceanographic patterns which serve as precursors of significant developments should be identified and explained. These may be presented in a stylized chart analysis format with explanatory text.

(3) Charts depicting mean monthly or seasonal storm tracks, and variations should be included, and accompanying text should indicate the expected local or regional effects of interest.

c. Section III -- Forecasting

(1) Whenever possible, provide standardized procedures and techniques for the preparation of routinely required forecasts and warnings. Include locally-developed, tried and tested techniques and thumb rules, together with estimates of their reliability and accuracy. Of particular importance is the specification of techniques to identify and forecast environmental conditions which could be hazardous to the personnel or material resources of supported commands. (See paragraph 3e(1) below.)

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(2) Specify requirements for the utilization of numerical products. Activities utilizing numerical products of the Fleet Numerical Meteorology and Oceanography Center (FLENUMMETOCEN) should include a discussion of the strengths and weaknesses of the various models in their areas of responsibility. FLENUMMETOCEN routinely prepares and distributes Model Performance Summaries to assist in identification of model skill and tendencies. These summaries contain verification data pertaining to atmospheric and oceanographic model forecasts at FLENUMMETOCEN and should be retained locally for future reference.

(3) Specify requirements and procedures for the monitoring, revision, and verification of forecasts issued.

(4) Provide a listing of applicable reference publications and material. This list should cover all support areas appropriate to the forecast activity's functions and mission. All references should be readily available to forecasters.

d. Section IV -- Specialized Forecasts

(1) As appropriate, provide guidance and procedures for obtaining, adapting, and utilizing specialized numerical forecast products (e.g., radar propagation, acoustics, sound focusing, electro-optics, ship and aircraft routing, magnetics).

(2) Beyond the standard list of products, specify the requirement for and procedures used locally to prepare specialized products.

(3) Provide a listing of applicable reference material and publications available to forecasters.

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e. Section V -- Environmental Effects

(1) This section should address in sufficient detail, environmental conditions impacting (unfavorably or favorably) the weapons/sensor systems, platforms, facilities, operations, and training of the commands supported. Critical or threshold values of specific environmental parameters are particularly appropriate. These may require a separate classified annex.

(2) Descriptions of phenomena and operating constraints the forecaster must be alert for are of particular value in order to provide optimum environmental services to commands/staffs. These may include areas such as minimum runway conditions for various types of aircraft operations, thunderstorm prevalence and proximity with respect to live ordnance handling and fueling operations, wind and sea conditions hazarding ship and small craft operations, surf heights and breaker types affecting local amphibious operations areas, and hazards to aviation by aircraft types and operations. This list is by no means comprehensive, but is provided only to give examples of the type of information that should be included.

(3) The environmental effects and critical/threshold values of concern to supported commands should be verified and updated through continuing liaison with those commands. As new or improved forecasting capabilities are attained, appropriate information needs to be exchanged with the supported commands to determine applicability or improvements to a specific problem area(s). Information obtained in this manner concerning critical environmental effects will be incorporated in the Forecaster's Handbook.

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(4) It is not the intent of this section to duplicate existing detailed instructions and publications on meteorological, oceanographic or acoustic support, numerical products, or other specialized forecast products. Rather, this section should consist of supplementary information which assists the forecaster in understanding and properly addressing the specific requirements of supported commands and local peculiarities and phenomena. Where classification is necessary, a separate classified supplement to the handbook may be prepared and retained locally.

f. Section VI -- References

List additional references, as deemed appropriate, beyond those cited in the text.